THE OPTICAL

MAGIC LANTERN JOURNAL AND PHOTOGRAPHIC ENLARGER.

EDITED BY J. HAY TAYLOR.

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CONTENTS.

PAGE
Notes.. 138
Dissolving with Single Lantern.. 139
Apparatus 141
Exhibiting Snow Scenes in the Lantern.. 142
The Smell with Oil Lamps.. 143
To find the Candle-Power of a Light 143
The Invention and Development of the Optical Lantern 144
A Startling Humorous Slide 146
Lantern Slide Box.. 146
On Judging Lantern Slides.. 146
Has the Saturator had its Day?.. 148
The Consumer and Gas Meter Question.. 148
The Lantern as an Educational Instrument.. 149
To Locate a Leak in a Gas-Bag.. 150
New Apparatus 150
Editorial Table 151
Patent Intelligence.. 151
Correspondence 152
Notes and Queries.. 152

Notices.

The *Optical Magic Lantern Journal and Photographic Enlarger* is issued on the 1st of every month, price One Penny, and may be obtained from all Newsvendors, Railway News Stalls, Photographic Dealers, or from the Publishers, at the following rates, post free:—

		United States.
12 months, including double numbers	2/6	75 cents.
Single copies	2½d.	8 „

Advertisements (Scale of Charges), displayed:—

	£	s.	d.
Front and back pages, by arrangement.			
Ordinary page (whole)..	3	0	0
„ „ (half)	1	15	0
„ „ (quarter)	1	0	0
„ „ (eighth)	0	10	0
„ „ per 1 inch in column..	0	6	0
„ „ „ ½ „	0	3	0

Exchange Column, General Wants, &c. (not Trade)—First 20 words, 6d.; and for every 3 additional words, 1d.

Small Advertisements must reach the office not later than the first post on the 24th of each month. All cheques and postal orders to be made payable to the Magic Lantern Journal Company, Limited.

Editorial communications must be addressed, J. HAY TAYLOR. Advertisements and business communications to the **Magic Lantern Journal Company, Limited, 9, Carthusian Street, London, E.C.**

American Agents:—The International News Co., 83 and 85, Duane Street, New York City.

Lantern Slide COMPETITION.

The Directors of this Journal Company, have pleasure in offering **CASH PRIZES** to the value of

£6 . 6s.

for the **BEST SET OF FOUR LANTERN SLIDES.**

The slides may consist of any landscape, and (according to the conditions mentioned) must be delivered on or before October 31st, addressed "Slide Competition," Magic Lantern Journal Company, Limited, 9, Carthusian Street, London, E.C.

CONDITIONS.

1.—Open to all comers, excepting professional lantern slide makers.

2.—The slides to become the property of the Magic Lantern Journal Company, Limited, with permission for reproduction in the Magic Lantern Journal if desired; and the negatives of successful slides to be sent for inspection if required.

3.—Slides may be made by any process, on any make of plates, and must be the actual work of the competitor, including the taking of the negatives.

4.—Slides to be 3¼ in. square. The Judge's decision to be final.

5.—All competitors must enclose the **COUPON** cut out from the bottom of this notice.

6.—A *nom de plume* must be attached to each set, and the name of the competitor placed in a sealed envelope, which must be endorsed with the *nom de plume*.

7.—As many sets of four slides as the competitor likes can be sent, so long as a separate *nom de plume* and coupon accompanies each set.

Cheques will be sent as follows to the winners:—

1st Prize	£3 . 3s.
2nd „	£2 . 2s.
3rd „	£1 . 1s.

COUPON—SLIDE COMPETITION.
October 31st, 1896.

M. L. J. Co., Ltd.

Notes.

PRIZES £6 6s.—From a publisher's notice on the previous page, it will be seen that the Directors of the Magic Lantern Journal Co., Ltd., intend giving as prizes for the best set of lantern slides, £6 6s., in accordance with rules stated in the aforesaid notice.—All slides are to be addressed to "Slide Competition."

* * *

OUR ANNUAL.—The intention was, that ere the September journal was published, the Annual would have been in the hands of our readers, but owing to many unforeseen circumstances it will have to be a few days late; however, shortly after this notice appears it will be published. At the present writing the greater part of it is printed. With pardonable pride we may say the volume will prove of particular interest. A few articles, we regret to say, arrived after the arranging had been completed, and these will from time to time appear in the Journal.

* * *

MR. BIRT ACRES IS INTRODUCED TO ROYALTY.—On the occasion of the marriage of H.R.H. Princess Maud of Wales, Mr. Acres had the honour of exhibiting his apparatus for producing the effect known as animated photographs before the guests at Marlborough House. The size of the disc used was 11 × 8 feet. One set of photographs was particularly applauded viz:—The Royal party arriving at the Cardiff exhibition on June 27th. Altogether twenty-one sets of pictures were projected, after which H.R.H. The Prince of Wales thanked Mr. Acres personally for the great pleasure that had been afforded to himself and guests.

* * *

BEN HUR.—The law decision which is still pending in America respecting the slides of Ben Hur, which were introduced by Messrs. Riley Bros., do not in any way affect sales in this country.

* * *

CINEMATOGRAPHS AT MODERATE PRICE.—Those who have hitherto purchased instruments of the Cinematograph class for exhibiting so-called living photographs, have been called on to pay something like one hundred pounds for the outfit.—Prices of this kind have received their death blow, for Messrs. Wrench & Son are now supplying the trade with an outfit to sell at £36.—It can be used in conjunction with any modern make of lantern.

ACETYLENE POISONOUS.—Some experiments have recently been conducted by M. Grehant with the view to ascertaining whether acetylene gas is poisonous. He experimented on a dog and found that in order to kill it he had to allow it to breathe air containing forty per cent. of acetylene for about an hour, although unconsciousness was reached at an early period.

* * *

AN ALL ROUND DEVELOPER.—After trying the various formulæ for developers, Prof. A. H. Sexton finds that the following give the most satisfactory results.

No. 1.

Pyro	1 ounce.
Potassium metabisulphite	1 ounce.
Water to	30 ounces.

No. 2.

Sodium carbonate (cyst.)	6 ounces.
Sodium sulphite	6 ounces.
Potassium bromide	60 grains.
Water to	30 ounces.

For landscapes use two parts of No. 1, two parts of No. 2, and two parts of water, and for portraits one part of No. 1, two parts of No. 2, and four parts of water.

* * *

OPAQUE SCREEN.—Stretch white linen on a frame, paste white paper at the back, and on this brown paper. Mix Spanish white, glue (thin) and a little blue, and coat the front of the screen.

* * *

X RAYS IN COURT.—At a recent case heard at Liverpool, a radiograph of a fractured arm was submitted in evidence by a doctor on behalf of the plaintiff, when the opposing counsel objected on the ground that there was no evidence to show that the doctor in question was capable of taking a photograph by the new process. After some explanation on the part of the doctor, the objection was overruled by the judge, as he said that instructions that had been published with respect to this process were so explicit that he believed he could take such himself.

* * *

FIRST OUT-DOOR LANTERN EXHIBITION OF THE SEASON.—On 20th ult., an out-door lantern exhibition took place at Mowlem Institute Road, Swanage. The lecture was given by Rev. T. A. Gurney, on "Extinct Monsters." The views on the screen showed up well, and the lecture was both instructive and interesting.

FINGER NAILS AND X RAYS.—A scare is going the rounds of many papers, to the effect that shortly after one submits his hand to the Röntgen rays the nails of the fingers will gradually detach themselves. Strange to say, many people accept this statement as gospel.

* * *

OXYGEN LIKE JELLY.—On the authority of Prof. Dewar it is stated that under certain conditions, by means of a magnet, liquid oxygen can be drawn from the atmosphere.

* * *

SLIDES FOR THE FABIAN SOCIETY.—The Fabian Society, 276, Strand, are desirous of obtaining free lantern slides (in aid of their work), such as sets on Slums and Slum Life, Life and Labour, Municipal Development, etc.

* * *

LANTERN AT COLOMBO.—The lantern is in use in Ceylon just as much in Summer as in Winter, and about midsummer evening the Rev. E. A. Prince, of the Wesleyan Mission, Brownrigg Street, Kandy, used the lantern to illustrate his lecture on the Catacombs of Rome to a large audience.

* * *

A BULLET IN THE BRAIN LOCATED.—At a shooting carnival at Glasgow, a young woman was accidently shot while attending to a booth, the bullet passing through her right eye. She was submitted to the Röntgen rays whilst under chloroform and the exact position of the bullet ascertained.

* * *

PHOTOGRAPHIC CONVENTION.—The past annual meetings of the Photographic Convention have been held at different towns in Great Britain and Ireland, and next year it has been decided that it will meet at Yarmouth.

* * *

MOTHER WOULD SEE THE DOCTOR GOING TO YOUR HOUSE.—The following story is told by a well-known lantern exhibitor: At one of his entertainments, two boys were struggling for one seat in the front row, when one challenged the other to fight it out, the reply to which was "If I fight, mother will give me a hiding." "How will she know?" says the other, "we are more than a mile from home," to which the former quietly replied "Your house is just opposite ours, and she will see the doctor going to your house."

BIRMINGHAM GUARDIANS.—A great success has been achieved in Birmingham by the election of Mrs. Stanton as a member of the Board of Guardians. Mrs. Stanton's husband is well known in the lantern trade as a maker of chromotropes and other slides. His premises are in Brearley Street.

* * *

A GOOD BUSINESS DODGE.—Rumour says that a certain chemist, who deals in lantern and photographic goods, lately hit upon a novel dodge for increasing his business. A well-known lady in the village was about to be married, so he circularised the place to the effect that he would give three guineas to the person who would take the best photograph of the bride as she was leaving the church door. Also that he was prepared to hire out hand cameras ready charged for use, and would at a moderate figure develop the films or plates and make lantern slides from the same. Needless to say he did a roaring trade. In a few days he announced that these slides would be projected by the lantern at the ——— Hall, admission 1/-, at which the public should decide as to which picture was worthy of the prize.—The net profits, after giving the prize, amounted to £83 5s. 4d.

—:o:—

Dissolving with Single Lantern.

DISSOLVING as accepted from a biunial point of view is impossible with a single lantern. With the former a second picture is projected on the screen superimposed on that which has just been seen and by gradually lowering or shutting off the light from the first picture the two pictures are made to gradually merge into one, and according to the skill exhibited in the raising and lowering of the lights so is the effect heightened.

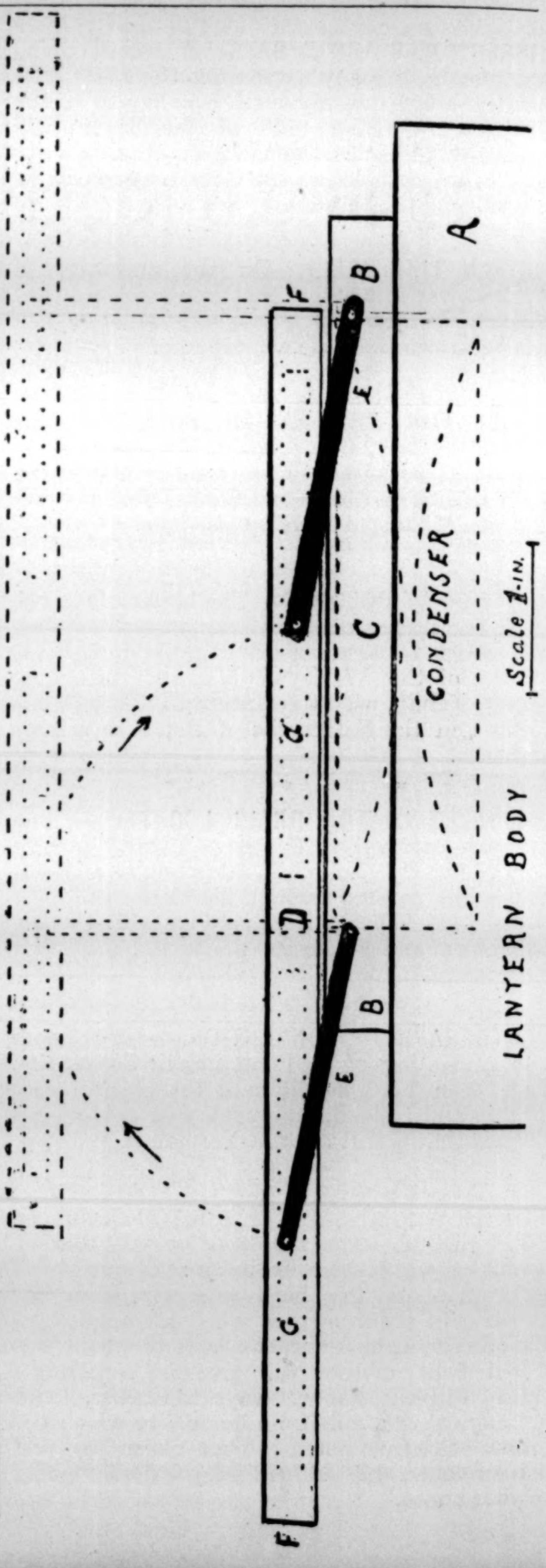
With a single lantern precisely the same effect cannot be obtained for obvious reasons. There are, however, various carriers on the market for obtaining as near an approach as possible to dissolving for use with single lanterns. Generally speaking, these consist of two classes. In one style a translucent screen gradually obscures the light, and just at the moment when the obscurity is complete, the slide is quickly changed by means of a carrier of the "to and fro" class, and it must be said that the effect is rather pleasant. In another class, a second slide is pushed into the same carrier but slightly in front of the slide which happens to be meantime projected on the screen, and being in front of the other it is naturally out of focus. To effect the change, the first is withdrawn, when by means of a spring, the second slide is quickly pushed back in the place where the other left and is thus instantly put into focus.

From letters we have from time to time received, there are lanternists who appear to think that dissolving as per bi-unial style may yet come to pass with a single lantern, but we may as well at once state that with a single lantern and a single optical system precisely the same effect cannot be produced.

Various means for quickly changing the slides have been devised; but the usual manner of effecting this is to pass the carrier quickly across the slide stage. A pleasant departure from this would be a means of throwing the slides out of focus during the change, and this can be done with a carrier which we will now describe. Our readers will of course be familiar with the instrument termed a parallel ruler. It is somewhat after this arrangement that the following carrier operates, and which will be explained by reference to the sketch. To apply this carrier to a lantern there must be a clear space between the condenser and the objective, to which end one of the "science" type of lantern is best suited; (A) represents the body of the lantern—looking down upon it. Immediately above and below the condenser (C) are screwed two strips of wood as at (B), and to this by means of two strips (E E), the carrier portion (D) is secured, there being two similar strips also fastened to the lower side. The slides are inserted in this carrier from the ends and occupy the position shown at (G G).

Having two slides in position in the carrier, the one, as will be seen, is in position for projection. To effect the change, the carrier is merely thrown over to the other side, but it will be observed that it, in moving across, describes a semi-circle, the effect on the screen being that as the first picture is brought out in front of the condenser, it is put out of focus, and the second one in being brought to view is at first blurred, but as it assumes its proper position, becomes sharp, thus giving a pleasing effect.

The movement is, as we said, similar to two parallel rulers with a double carrier fixed between the upper and lower ruler. It can be easily made by anyone used to the handling of tools.



Apparatus.

By Fred. J. Scrimgeour.

THE season is again at hand when the lanternist turns his thoughts to his apparatus; and if he is a practical man, he will thoroughly overhaul his lantern and lantern-box. The result of this general examination will, in many cases, be that the lantern will for the moment, be left on the kitchen floor, while the lanternist gets a post-card and writes off to some of the dealers for all the catalogues and price lists they can send him, post free. Now lantern catalogues have their peculiarities, and it is positively dangerous to let an enthusiast loose on some of them, especially when the last dozen pages are headed "Accessories." In fact in all cases it is best for the lanternist to have a fairly good idea of what he intends to order before the post arrives. Therefore, a little general advice on some of the points to be remembered in choosing new apparatus, may not seem out of place now.

The first question we would ask would be, "Is the lantern to be used in one hall only; or in many different halls"? If the former is your intention, the matter is greatly simplified, and we enquire the size of the hall. The size of the hall will regulate the size of the screen, and when both of these are known, the focal length of lenses for the lantern is easily determined. Then the size of lantern you should purchase will depend on the use it is to be put to. If you intend to give a series of entertainments a bi-unial will be most suitable, though of course a really good triple will be required if these shows are to be of the highest class. Or should you wish only to throw photos on the screen in the simplest manner, a single will do all you want. In either of these cases you need not be particularly anxious to have your apparatus in a compact form; it is more important that it should be strong and steady. The body may be either Russian iron or wood, if it is a single, but only the latter is used for bi-unials and triples; the support for the lens or lenses should be substantially made of brass, as nothing will compensate for want of firmness in this part. A strong table will serve to put the lantern on for the exhibition, as a special lantern stand is unnecessary in the case we have in view. The more opaque the screen is the better, for then more light will be reflected from the surface, and the brighter will the picture appear to the audience. As we are still dealing with the case when the lantern is to be used in one hall only, we must remember that the permanent roller screen, suspended from the hall roof, is usually the most opaque screen in the market, and therefore the best for lantern purposes. It is not suited for the travelling lanternist, but here you have a decided boon, and if possible you should take advantage of it. Even if the form of the hall renders a fixed roller screen impracticable, by getting a really strong and firm frame, you may use good thick linen and thus have a fairly opaque screen. The shape of the hall rather than its capacity will guide you regarding the size of screen required, but the general size will be 12 feet square, this being usually quite large enough for an audience of from six to eight hundred. Therefore, in our calculations for focal length of the lenses, we will for convenience sake use this size. Only one lens or set of lenses will be required, as the distance from the lantern to the screen will be fixed. Personally, I prefer the lantern to be as far from the screen as gas brackets and pillars will allow; the back of the hall is my favourite place. In your case get any obtrusive bracket removed, and secure comfort during the coming season. Touring operators have to take those pests as they find them, and many anxious moments are they responsible for. Of course the further back the lantern is placed the longer must be the focus of the lens or lenses. This must be kept in mind when purchasing.

Then comes the question of light. If you are in the town of course you will use limelight, and even if you are in the country, give limelight a second thought before you dismiss it as impracticable. The town operator will now have to choose between mixed and blow-through jets. Unless you intend fitting up the hall with a screen more than 12 feet square a good blow-through will be sufficient for most occasions. Then the ordinary gas supply of the hall should be used, and it will be found worth the trouble to have a special gas pipe brought up through the floor just where the lantern is to be placed. The connection with the hall main should be so made, that all the gas jets can be turned down at once, without affecting in any way the supply from this special pipe. A mixed jet will give a stronger and whiter light, but it requires more experience and care in working, and costs rather more in gas, both oxygen and hydrogen or coal gas being of necessity compressed. However, if your hall is so large as to require a mixed jet, the audience will be large, and so, let us hope, will be the collections.

Our second case, when the lantern is to be moved about from hall to hall, and perhaps from town to town. Weight and compactness will now be of some consideration; the size of lantern will again depend on the class of work required. The screen will require some thought, and you will desire one that combines portability with a certain amount of rigidity; the frame should pack into a strong box, in which also the sheet might be carried. One good screen that fulfils these conditions, is made of wooden poles, in lengths of 6 feet connected together, when erected, by a series of brass tubes. This is portable, easily erected, and wonderfully rigid. Now for the lenses; if you are exhibiting in various halls differing in form as well as capacity, it will be wise to carry front lenses of at least two different foci. This will afford some scope in dodging low centre gas brackets, and in reaching good gas connections, should blow-through jets be used. Eight inches and ten inches are the focal length of the lenses I have found most useful. The remarks made above regarding jets is still applicable, although the fact that compressed hydrogen, as well as oxygen will often have to be carried lest a connection with the hall supply cannot be made, will be a good reason for being supplied with mixed as well as with blow-through jets. For besides giving a better light they consume much less hydrogen than blow-throughs. Many jets are in the market which have two interchangeable sets of nipples, giving both classes of jet at will. Those of a really first-class make will be found quite reliable, and the ideal jet in many cases.

The lantern stand is a most important matter. Many operators trust to getting a suitable table at the hall where the exhibition is to take place. This may be all very well for a single lantern, but for most bi-unials, and for all triples it is best to be independent of other people's tables, especially such tables as are generally found in public halls. In travelling, your lantern-box will require to be a strong iron-bound affair, and this with adjustable wooden legs will form a lantern stand on which you can rely. To be the proper height the top of this stand should be about 5 feet from the floor.

Then there is another small piece of apparatus to which I would call your attention; that is a tilting board. Books may serve to raise the front of a single lantern, but something better is wanted for the larger sizes. A simple yet efficient device can be made with two boards, each about 1 ft. by 1½ ft. in size. Join them at one end with a couple of hinges, and through the opposite end of one board pass two screws about 8 inches long, having thumb pieces at the top. The foot ends of the screws will rest on the top of the under board, and as the screws are lowered the end of the upper board will rise. If, now, this arrangement is slipped under the front of the baseboard of the lantern, the tilting will be much simplified. The lantern-box should be fitted with a small drawer in which to carry scissors, twine, white lead, gas nippers for taking out burners (which should be replaced), and many other appliances, which although in themselves small and insignificant, help to make or mar a lantern exhibition.

—:o:—

Exhibiting Snow Scenes in the Lantern.

By J. R. Bell.

WHEN a ceiling is whitewashed, a considerable quantity of blue colour is mixed with the whiting, otherwise the result would not be so pleasant, and I think I am safe in saying that all artists who want to enhance white add a little blue to their colour.

I remember being at a lantern exhibition some time ago where a great many snow scenes were projected on the screen, but the snow did not look "snow," it was too white. At another exhibition in which similiar slides were shown, the effect was grand, so out of curiosity I went to the lantern after the entertainment was over and got into conversation with the operator, when I learned that all the cover glasses of the slides were of a very pale blue glass, and this was the whole secret. I have on numerous occasions since that time shown snow scenes on the screen, but instead of mounting the slides with tinted cover glasses I have simply inserted a strip of glass of the desired tint in the slot of the objective (many are now fitted for this), which has answered the purpose equally well and is less expensive. I now make it a rule to include in my outfit several delicate tints of glass ready to fit into the objective, and find that certain tints greatly improve many pictures, notably a warm tint for bright sunlight slides. I may here say that instead of getting tinted glass one can readily make it for themselves by procuring a few small bottles of cold lacquer made by Mr. Dalton, whose advertisement I have frequently seen in the Optical Magic Lantern Journal. Might I suggest to this firm that they put up a small box of assorted tints, each bottle to contain about an ounce, for according to their advertisement they only supply in pints, quarts, and gallons, and the number who would take an assorted box must be very great compared to those who would buy a large stock of the preparation.

—:o:—

The Smell with Oil Lamps.

By Henry Goddard.

MANY good oil lamps for lanterns have been discarded as useless by their owners simply because they found that during use they gave off a smell, for which the maker of the lamp has been blamed; whereas, if the truth were known, the fault lay entirely with the user, and this fault should be attributed either to his carelessness or want of knowledge.

It cannot be too deeply impressed upon users, that all lamps, however expensive they may be, will smell when dirty, and the word dirty is not supposed to apply to a mass of dirt that can be seen. Dirt that may cause a lamp to smell may be scarcely visible to the eye, but it may be there all the same, and makes its presence known through the olfactory organs.

The smell is not given off from the oil that is in the reservoir of the lamp, but from the very thin coating which in spite of great care, sooner or later becomes spread over the outer surface of the metal or other container of the lamp body.

Only the very best kerosene should be used, and in this respect a high price oil proves economical. Many grades of paraffin give off smell when being burned, give a very yellow flame, and in a short time clog the wicks so that the light gradually becomes diminished—so much so that one has to raise the wicks slightly in order to obtain a proper light. As soon as the wicks under these circumstances have been raised, the trouble is renewed double-fold, for the edges then begin to char, and the flame again lessens. Further turning up gives a larger flame for a moment or two, but at less brightness than before, and soon gives off smell and smoke. It cannot, therefore, be too strongly impressed upon the user to obtain the very best oil to commence with, and to pay particular attention that the lamp is kept scrupulously clean. In order to attain this end, all oil should be drained out as soon as the lamp has been finished with, and all parts well cleaned.

It is a great mistake for one who may be about to give an exhibition, and to which place the lantern has to be carried, to fill the lamp before starting—this should only be done at the last moment. Much better to take the lamp empty, with the wicks well dried, and the supply of oil in a bottle. Half an hour before the time of commencing the exhibition is plenty time enough to charge the lamp with oil—it thus leaves ample time for the oil to rise in the wicks, after which they should be carefully trimmed and lighted for a few minutes to see that they burn evenly, and then they should be turned very low, and when the time arrives when it is required again, they should be turned up a little at a time, as the surroundings get heated, and it will be found that in about ten minutes after lighting up, the lamp will be burning at its best.

—:o:—

To Find the Candle-power of a Light.

By J. J. Bradford.

WHAT a lot of nonsense is written about this, that, and the other light being equal to some stupendous number of candles! I have found that a light that has been termed 100 candle-power has in reality only been equivalent to one-half the stated number.

It is with the idea of enabling anyone to test his own light that I send this contribution to The Optical Magic Lantern Journal. Do not run away with the idea that a lot of elaborate apparatus is necessary. To aim at absolute accuracy from a scientific point of view is, except under certain circumstances, not absolutely required, and so long as one can get a tolerably good idea of the candle-power of the light he is using, it is near enough if he finds out that what he has been told is 100 candles is somewhere between 75 and 80 instead.

What is known as a standard candle is a sperm candle six to the pound, and burning 120 grains per hour. Even with these an absolute standard is wanting, but they are sufficiently near for general purposes.

There are several processes of ascertaining candle-power of a given light, one being to erect a rod a short distance in front of a screen;

in front of this again the candle is placed, so that the shadow of the rod will fall on the screen. The light to be tested being of course of several candle-power, must be placed at some considerable distance from the screen, and moved backwards and forwards until the shadows of the rod cast by the candle and that from the light being tested are of the same intensity. If the candle happen to be one yard from the screen and the light to be tested be five yards, then the candle-power will be 25 candles, for the intensity will be proportional to the square of the relative distances of the two lights.

:o:

The Invention and Development of the Optical Lantern.

By Edward Dunmore.

CHAPTER IV.

THE illuminant for lantern work should be of the greatest power and of the the smallest size—in fact, nearly a point. The electric arc being the only source of light conforming entirely to these conditions is unfortunately only occasionally available; when it is, we get an ideal light. Several excellent arc lights adapted to the lantern are now in the market. The next best is the limelight, produced by incandescence of a cylinder of lime in a flame of spirit of wine and oxygen, or of oxygen and hydrogen gases, and at the present time it is the universal illuminant when much amplification is required. Third, and last, is the oil-lamp with wicks of varying size and number, the three-wicked lamp being, perhaps, the most popular. It gives an excellent light for small enlargements, to say nothing of the incandescent gas-light which is now being adapted to ordinary house gas. The limelight, originally under the name of the oxycalcium-light, was produced by heating a cylinder of lime in a spirit flame, a jet of oxygen gas playing through the flame on to the lime by which it was brought into a high state of incandescence, affording an exceedingly good white light. This kind of lamp is often fitted with an asbestos wick, and the spirit reservoir with an automatic regulator that governs the flow of the spirit to the wick. This form of lamp is useful where house gas is not available, as in many country places. Oxygen gas, till recently, was easily procured in a compressed form, but owing to some serious accidents caused by the explosion of the cylinders, the railway companies have placed so many restrictions on its transit that its supply to outlying districts cannot be relied upon. If, however, we are prevented getting it in its most convenient form, there is not a great deal of trouble in making it ourselves. The apparatus required is extremely simple and inexpensive, consisting of a retort and a wash-bottle, with the necessary rubber tubing with a gas-bag in which to store the product. The retort consists of a pyramid-shaped vessel of sheet iron, fitted at the narrow end with a screw cap to permit the insertion of the charge of chlorate of potash and manganese oxide with a little salt; in this cap are fixed two tubes, one to act as a safety valve, being tightly corked, and the other to conduct the gas as generated to the wash-bottle, consisting of a one or two gallon tin can, closed with a cork perforated with two holes. Through one aperture a tube passes nearly to the bottom of the can, the other just through the cork; the long tube being connected with the retort, and the shorter one, or delivery tube, with the gas-bag. The wash-bottle is two-thirds filled with water, in which some washing soda has been dissolved before use. To work this apparatus, we put into the retort a charge composed of powdered chlorate of potash eight parts, black oxide of manganese two parts, with a little common salt. This compound is well mixed together, put in the retort and the tap screwed on. We may reckon one pound chlorate to produce 4 feet of gas, and so on in proportion. We next connect the retort with the long tube of the partially filled wash-bottle by a piece of india-rubber tubing. As a preliminary precaution the gas-bag having the top opened, is tightly rolled up in order to expel any air it may contain, this done, the tap is closed and it is ready for filling, it is best to lay the gas-bag on a table or bench raised up above the wash-bottle to prevent the risk of of any water being forced into it by the pressure of the gas, which might happen if it was lower. A sufficient length of india-rubber tubing is connected with the delivery pipe of the wash-bottle ready to attach to the bag. The charged retort is now put on a moderate fire, or gas-stove, which is better, being more under control. After a short time a bubbling sound in the wash-bottle indicates that the oxygen gas is coming off; this is allowed to waste for a minute or two in order to expel the air in the can, then the delivery tube is expeditiously fixed to the nozzle of the gas-bag and the tap opened, gradually the bag will become distended, and when tightly full, the tap is closed and the delivery pipe pulled off. The gas is now ready for use. If the bubbling ceases before the bag is full and the charge unexhausted, greater heat may be applied to the retort, when, in all probability, the oxygen will be disengaged as rapidly or more so than at first, when the heat must be at once decreased. The whole process should proceed steadily and be kept well under control, if not, there is a danger of some of the charge being forced into the delivery pipe of the retort and choking it, when an explosion would probably result unless the cork was blown out of the safety pipe. Most of the sheet or cast-iron retorts as sold are not provided with any safety vent but merely the delivery pipe, so in using them special care must be exercised to heat the charge gradually, and not have too much of it in the retort at one time. To have fairly long lengths of tubing between the retort wash-bottle and gas-bag, and to have the india-rubber tubes merely attached by their own elasticity and not in any way tied or fastened on, when, in case of any stoppage, they will blow off, and nothing more than a little waste of gas will result. After making the gas, soon as the retort is cool it should be washed out with hot water until the water comes away clean; if the residue is left in, the metal gets corroded, and the retort is soon spoiled. The manganese might be used over and over again, but is not worth the trouble of collecting. It will be seen that on account of the simplicity of the arrangement many schemes may be improved to effect the same end; for instance, an iron tea-kettle may be turned into an efficient retort, using the spout for the delivery tube, and a jam jar for a wash-bottle, etc.

CHAPTER V.

Compressed oxygen gas is manufactured on a large scale by Brin's Oxygen Company, Clarkson, and others, and supplied in drawn steel cylinders sustaining a pressure of 120 atmospheres, and they are so strong that a cylinder having about a cubic foot containing capacity will hold 40 feet of compressed gas. Oxygen made by the Brin process is absolutely pure, being derived from the air without the decomposition of any salt, as is the case with potassic chlorate and manganese, with which we get an intermixture of chlorine, which is separated from the oxygen by the alkaline water in the wash-bottle.

Oxygen forms one-fifth of the air we breathe, the other four-fifths being nitrogen. Boussingault's idea was to abstract this fifth part of oxygen by some substance from which it could be again recovered. Barium oxide was found capable of doing this at a low red heat, and giving it up when the temperature was raised, the barium oxide returning to its original condition; this was the theory, but in its crude form not altogether practicable. Messrs. Brin, satisfied that it could be done, experimented until success crowned their efforts. They found that heating the baryta in a partial vacuum, then admitting air under pressure, the baryta absorbed very much more of the oxygen, which could be easily disengaged by increase of temperature. They constructed apparatus which was found to work perfectly, so that an unlimited supply of pure atmospheric oxygen was readily obtained at a small cost. A company was formed which, now located at Westminster, do a large business. The smallest cylinders sent out contain 3 cubic feet, and measure outside 7 inches by 3 inches, and the largest 100 cubic feet, and measure outside 78 inches by 5⅝ inches There are several other intermediate sizes to suit consumers, and the pressure is uniformly 120 atmospheres. It has been suggested that if the pressure was reduced, the danger of explosion would be done away with; it does not seem that the suggestion was favourably received, as I believe no alteration has been made, and when we consider the thousands of cylinders that have been filled at the full pressure, and conveyed without any special precautions and with a very small percentage of accidents, the danger cannot be very great. The proper attention to the annealing of the cylinders and packing, to which recent explosions have called attention, will still more minimise the risk. These cylinders when in use are provided with a pressure gauge and regulator which will indicate the amount of gas in the bottle, and also regulate the flow when the cylinder is attached to the tubing, which is effected by merely slipping the india-rubber over a nozzle. The tap must be very cautiously manipulated in turning on the gas to the jet, the quantity allowed to pass being judged by the hissing noise, which should be scarcely perceptible or entirely absent. This hissing noise is undoubtedly partly owing to the roughness in the jet, as the noise is absent in some jets at similar pressure; the noise indicates not only a waste of gas, but a worse light. Beard's regulator is one very generally in use, and seems to answer the purpose very satisfactorily. There are several other ingenious and good regulators in the market, and no cylinder of compressed gas ought to be used without a good one of some kind. Hydrogen gas is also supplied in cylinders, and if pure is very much better than the usual household supply, possessing better heating powers, which is the office of hydrogen. In this connection it may be here mentioned that 6 feet of oxygen gas will, or should do if not wasted, supply two lanterns continuously for about an hour and a half. If we use gas bags we go to the other extreme, and have to supply pressure instead of regulating the excess.

(*To be continued.*)

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A Startling Humorous Slide.

By J. Doumer.

I HAVE several times exhibited this set of slides, and I can vouch for it "bringing down the house." It can either be made from freehand drawings, or it can be photographed as it were from Nature. I have made both, and prefer the latter. The scene is a stage, on which are arranged chairs as for Christie or other minstrels. The camera having been erected, and a negative taken, care must be taken that neither camera nor chairs are in the slightest moved. This negative having been taken, bring on the troupe, with banjos, bones, etc., with their faces and hands white and after they are all seated and in position taking care not to move the chairs in the slightest, take a second negative; now get them all to stand up (taking care not to move the chairs), and lean slightly forward, as in making a bow, and take a third negative. See that the faces are in sight.

From these negatives makes slides as follows:—One from the first negative, two from the second, and two from the third.

These are then to be coloured as fancy dictates, so that when accurately registered and projected the following will be seen:—First a stage, with chairs, flowers, etc., on this is dissolved the sitters with white faces. The next slide with the faces painted in shades to represent niggers is slowly dissolved on, after which the figures standing up (and with black faces) is flashed on. The next slide of the same, but with white faces, is then dissolved on, and finally the first slide containing the empty chairs is flashed on.

The whole affair is very startling, and although it may seem elaborate, is really very simple, a bi-unial lantern being all that is necessary to show them.

Lantern Slide Box.

By W. J. Stainthorp.

THE following description of a slide box, made to my order three or four years ago by a local carpenter, may be of service to some of the readers.

It consists of a lidless box of such size that when lined with baize it holds seven dozen slides, no packing being placed between the slides. The cover to this consists of a similar lidless box fitting easily over the box proper, like the cardboard boxes in which dry plates are packed. In use, the box with the cover on is turned upside down and the box proper drawn away. The slides drop into the cover, which, being larger than the box, enables each slide to be easily withdrawn. The box proper is handed to the assistant with instructions that the slides are to be replaced in it in the order in which they pass through the lantern.

Advantages:—Easy withdrawal of the slides for insertion in the carrier; slides ready packed at end of the lecture and in proper order for future use.

——:o:——

On Judging Lantern Slides.

By T. Perkins.

OUR local amateur photographic society has for the last five years offered two prizes for the best and second best sets of six lantern slides sent in by members for exhibition at the annual meeting. The offering of prizes, since the society is in a flourishing financial condition, is a matter of no difficulty, nor has much difficulty been met with in getting entries, for, as a rule, about a third of the total number of members contribute. In fact, there are few of the slide-making members who do not send in a set; but the difficulty has arisen in framing a satisfactory scheme for awarding the prizes. We cannot afford to pay the fees and travelling expenses of an outside judge, so that we have had to make the awards by the votes of members present at the exhibition. We have tried several schemes, altering them from year to year, as defects were discovered in the working, and have now arrived at an arrangement which the experience of two years has shown to be satisfactory to all concerned. Other societies may have met with difficulties similar to those which have beset us, and if they have not already found a way of overcoming them, they may be glad to have the benefit of our experience; so I will here set down a short account of the various schemes we have tried, and the final result at which we have arrived.

On the first occasion, it chanced that all those who had entered slides and no other members were present at the meeting, and an arrangement was agreed to that no one should vote for his own slides. The slides were shown in separate sets, the commencement and end of each set being announced by the honorary secretary, but the names of the members who had entered them were not made known. At the conclusion, each member wrote his vote on a slip of paper, folded it, and put it into a ballot box. When this box was opened and the papers examined, it was found that the votes were equally distributed among the competitors, a result that pleased no one. The next year the same system was tried at a fuller meeting and a more definite result was arrived at, the competitors being separated by a considerable number of votes; but in conversation afterwards it came out that many of the members had voted for this or that set because it contained some particular slide that had taken their fancy, so that it was possible that the winner of the first prize had gained it because one especial slide had found favour in the eyes of the majority of those present. Proposals for a change were made, and the next year the slides were shown in sets; but the members were provided with lists of the numbers and titles of each slide, against which they were directed to place the class—first, second, or third— into which they desired to put each slide as it appeared on the screen. Those members who had entered slides were directed to award classes to their own slides. At the conclusion the marked lists were handed to the officers of the society, who reckoned each first-class as worth three marks; each second as worth two; and each third as worth one. The marks gained by each set were added up and the prizes awarded accordingly. Conversation, after the result had been made known, showed that the system did not meet with universal favour. Competitors did not like awarding classes to their own slides, and non-competitors said that in nearly all instances, although the names of the producers of each set were not announced, yet some one slide revealed their identity and so they knew whose sets they were voting for, and, either feeling a bias in the favour of some friend found it hard not to over-estimate the value of his work, or, from fearing to favour, gave a lower class than they otherwise would in all probability have done.

These difficulties led to further revision, and the scheme at present in use, which seems to work well, was devised. The plan is as follows:—Each competing member sends to the honorary secretary, a few days before the meeting, either the slides themselves or their titles and descriptions. When the secretary has the full list before him he shuffles the slides, so to say, keeping of course a key for his own use and arranging them roughly according to subjects—landscapes, seascapes, river views, figure subjects, architecture, animals, etc., and numbers them consecutively. Thus it by no means follows that because slide No. 5 is by Mr. A., slide No. 6 will be his also; hence, though some member may be able to guess at the name of the maker of some one slide, he will not of necessity know all the other slides of the same set. The hon. secretary then writes out a sufficient number of lists for each member who is expected to attend to have one.

When the time for exhibiting the slides comes, they are first passed in order through the lantern the title of each slide being announced, so that the members may be able to form a standard in their own minds; then the slides are passed through again slowly, and the votes are recorded on the prepared lists which have been handed to the members. The honorary secretary, who alone knows who have produced each of the slides, does not vote, and no competitor records any vote for his own work; but, with these exceptions, each member present places each slide in the first, second, or third class according to the best of his judgment. At the conclusion the votes are estimated and added up as already described, and the hon. secretary on his key list enters the total marks gained by each slide opposite to its number, and then adds up the total of the marks gained by each set. One thing, however, remains to be done; and that is to give an average to fill up the blank spaces left in his list by each competing member opposite to the numbers of his own slides. That this is necessary will be seen from the following considerations. Supposing that twelve members are present and that one of them has entered a set for competition, and that all other competing sets have been entered by members who are not present, then each of these last will receive votes from all the twelve members present, while the first will only receive votes from eleven persons as the member who has entered them cannot vote for his own work. He would therefore be at a disadvantage unless some allowance is made him; he therefore will have one-eleventh of the marks gained by his set added to form his total. The fairness of this method has been acknowledged by all of our members, and the method reduces to a minimum any unfairness that would arise from the individual predilection felt by the various members for special subjects or styles of working.

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Has the Saturator had its Day?

By C. Wilson.

A POPULAR lantern luminary thus queried me some days ago, after we had made some trials with a new acetylene generator. I replied with some emphasis, "No, sir! the saturator *has not* had its day; it has come to stay with us, and, depend upon it, stay it will."

It is astonishing how easily some folk are led into "fresh fields and pastures new." Just because a clever salesman had succeeded in his purpose, everything else must be rubbish and therefore useless. But I must not be misunderstood. I have nothing whatever to say against the new acetylene light. No! the highest praise I have for it; and an apparatus for generating the gas is a valuable addition to any lanternist's kit. But the two lights are at present totally distinct.

Those who adopt the use of the calcium carbide, will undoubtedly discard their lamps altogether, for it cannot be denied that the lights from the best of lamps is not near so brilliant as that given by the acetylene gas, whose illuminating power is about equal to the oxy-calcium form; and therefore its popularity will soon be established, and being at present, as it were, in its infancy, future developments will probably add to its usefulness.

The condition of things with the saturator in its now perfected form cannot be compared with any other instrument of its class, owing to its unquestioned superiority.

It does all a lanternist expects from a lime-light point of view. Its advantages are many. Being compact can be stored in the lantern body, and we can't do that with the cylinder of hydrogen; one gas only is required to set it at work, and its illuminating properties, according to the highest and best authorities, are quite on a par with the best light from the mixed gases. "Has it had its day?" "Rubbish, No!"

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The Consumer and Gas Meter Question.

By Index.

THE readers of the Optical Magic Lantern Journal are so perfectly posted from time to time in all matters relating to apparatus for the generation, forces, compressing and gauging of gases, that a few words on the above vexed question may not be deemed in *a propos*?

Undoubtedly many lanternists while scanning the letters that for some days have occupied space in the morning papers, have said inwardly, "Ah, just my case," or, "I fully endorse that man's opinion." But to one who threshed out the subject a generation or two ago! he reads, and reads on, only muttering to himself some such ejaculations as "Stuff," "Twaddle," "I read that when I was at school," "Old as the hills," or, "Nothing original in that," and so on.

From the foregoing it will be conjectured that these lines are written in defence of the gas meter; that is so, if it needs defending, and the writer leans that way until the consumer, or disputants show less ignorance, which they can easily do by a little calm forethought and consideration.

The bungle of the whole thing, as can be gleaned by perusing the lengthy correspondence, appears to be, that if the gas bill is higher than usual the meter must be out of order! and as a remedy one or more writers are bold enough to suggest the intercession of the Legislature.

Now that is just as absurd as it would be to say, "The meter could not go wrong," and no sensible mechanician would assert that, any more than that your sewing machine would never break down, or that your clock would never give out, or that the condenser of your bi-unial would never crack; no, your gas registering box is not impervious to accident or fault, but open to defect, much in the same way as any other machine under similar conditions. But when one considers the hundreds of thousands of these instruments that are constantly at work, it will readily be acknowledged that the defective ones are infinitesimal and do not warrant the censure that has been showered upon them.

Forty-nine out of each fifty that are the subject of complaint by the consumer have been proved on testing to register correctly. It is somewhat amusing to note when looking through the correspondence that in no case has a statement been made that the meter registers too slow, though it is quite possible for it to do so. Oh, no, when the shoe pinches we cry out. "Can it be avoided?" Yes, to a large extent it can, and a couple of suggestions are here laid down, which, if adopted, would lighten to a great degree the disappointment experienced.

If the consumer has not up to now made a practice of taking a periodical reading of the index, say once a week, or oftener if necessary, and made a note of it, by comparing the consumption according to the months in their cycle round, the deviation would at once be noticed and seen into. To be more explicit, during the month of July, 1895, I consumed 3,500 feet of gas, and during the same period this year 5,060 feet. I naturally exclaim, "Hallo! how's this?" but the extra 1,500 is accounted for when I remember that atmospheric arrangement that we fitted up for the boiling purposes. Had the surmised mistake not been detected till the quarterly account turned up, I should have considered myself mulcted to the tune of some thousands of feet of house gas.

It will be apparent to any lanternist, specially when he's been to his oxygen bottle only to find it empty, or nearly so, and his mind only been made easy when on reflection he has been able to account for its disappearance.

But you say, "There's been no extra gas burnt." In that case of course something is wrong. It may be accounted for in the following way: So soon as you are certain something is not quite as it should be, see that all the jets in the house are shut off; keep the gas full on at the main. Next look at the top dial of the index, you may detect it moving, if not, mark on a piece of a paper its exact position. In an hour or two look again, and if you find it has travelled, turn off at the main, call in the gasfitter, for the gas is escaping, but, if no alteration can be noticed, then it is time to communicate the grievance to the company. But if the first of these two hints be adopted it is more than probable all will be satisfactory.

I have been questioned as to whether the so-called automatic meter can benefit a lanternist in any way. This will be replied to in a short article, possibly in the next issue.

The Lantern as an Educational Instrument.

By J. J. Vezey.

TO those interested in the progress of the lantern, there are few facts more encouraging than its advance in the past few years as an educational instrument. If any one a short time back had suggested that a lantern was a necessary item of school-machinery, he would have been laughed at, and would have been considered more foolish than those who recently advocated the introduction of pianos into Board Schools. Yet, what do we see to-day? At colleges, scientific institutions, and all large educational establishments, a lantern is one of the most important instruments, both for the class-room and the lecture-room, and the most eminent lecturers of the day would hesitate to deliver a discourse unless they had a lantern for the illustrations.

It would be difficult to over-estimate the important part the lantern has filled in popularising science. There are few subjects in which it has not assisted. Its usefulness has been enormously increased by the advance made in photo-micrography. Botanical, physiological, natural history, and other objects can now be easily photographed under the microscope, and from the negatives so taken, lantern slides are made, and objects which in their natural condition are quite invisible to the naked eye, can be seen with all the beauties of their details magnified into pictures of twelve feet diameter and over. In illustrating lectures on physical science, the lantern is invaluable. By means of the arrangement for horizontal projection, it is possible to perform experiments before a large audience, which could formerly be seen only by a few persons at a time; to name only such subjects as spectroscope, the polarisation of light, crystallisation, magnetism, etc., is quite sufficient to recall the value of the lantern in the lecture-room.

In all the subjects which require the assistance of the microscope, the lantern is indispensable, for whereas it is only possible to show a microscope to one person at a time, the object can be enlarged by means of the lantern so that hundreds can see it together.

This increased use of the lantern has largely stimulated lantern makers to improve its construction and method of lighting, because for some of the uses named an old-fashioned instrument, lighted with oil, would be of little value. Perhaps the most modern example of the increased popularity of the lantern may be found in its recent application to the exhibition of what are called "living pictures." When Edison brought out his kinetoscope a few years ago, it was considered a very clever thing, but it excited nothing like the interest it has evoked since its principle has been applied to the lantern, and it is gratifying to all lanternists to note the enthusiastic way in which the public are willing to pay their money to see the various exhibitions now open for the display of moving pictures by means of the lantern.

To review the present position, it may be said that what was considered merely a child's toy some twenty-five years ago, is now regarded as an important educational instrument, and makers of the lantern, and workers with it, should do all in their power to improve and adapt it for the useful future it has before it, as an illustrator of unsurpassed value.

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To Locate a Leak in a Gas-Bag.

By Philip J. Lehmann.

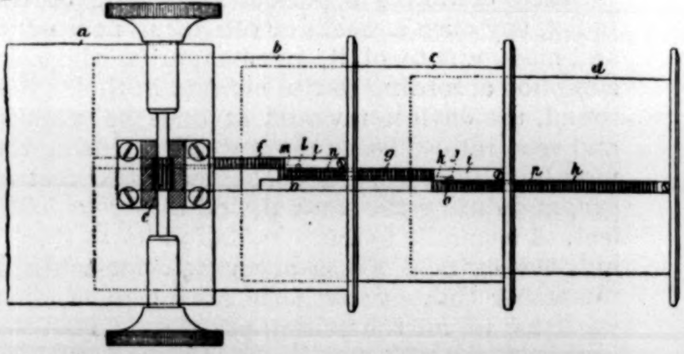
GAS-BAGS cannot be said to be in general use now that gas can be obtained compressed in cylinders, but still, all the same, there are a number in use. It cannot be supposed that bags will not spring a leak, and when they do it is sometimes a difficult matter to locate the exact spot where the leak occurs. Of course when it is found it is, generally speaking, not a difficult task to remedy the same. However, the job is to find it.—The usual mode, after having given up the plan of holding the hand or face to various suspected portions, is to dip parts of the bag containing gas or air under water, and, on applying pressure, watch for air bubbles. This method, however, is a cumbersome one.—A neat and more efficacious plan is to fill the bag nearly full of air and then insert the stem of a charged and lighted tobacco pipe into the nozzle, cover the bowl of the pipe with a piece of linen and then blow the bag up full.—When the bag is pressed the leak will then be apparent by reason of the small stream of smoke issuing from the leak.

New Apparatus.

TRIPLE RACK FRONT.

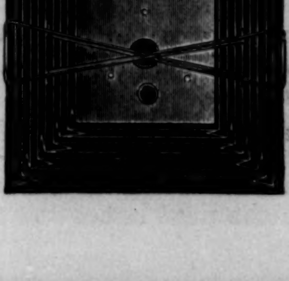
Hitherto, when a triple rack front has been operated by pinions, it has been found necessary to have three pinions, which, when folded close together, do not perhaps have the neatest possible appearance. By means of an ingenious method of engaging the three racks, Mr. A. Wrench has been able to adjust all three racks by means of one pinion and the means of so doing have been patented.

When the three tubes are folded up close together the rotation of the pinion causes the smaller tube to be racked forward, and as soon as this has been racked to its extreme length, a spring at its end is liberated, which prevents it from being pushed in. By continuing the rotation of the pinion, the second tube is racked forward until its catch-spring operates in the same manner, and so on until all the tubes are racked out. By reversing the motion of the pinion the tubes are withdrawn in the same order. When all tubes are racked out they are very firm and cannot be pushed in by hand.



PYRAMID FOLDING LAMP.

Mr. Tylar of Birmingham has lately brought out a folding lamp cover, for placing over a candle for use for developing and other purposes. It is made on the conical bellows principle and has one thickness of ruby and one thickness of yellow fabric with metal top, bottom, and struts. The illustrations show it closed and open.



Editorial Table.

"SHAKESPEARE'S TOWN AND TIMES." London: Dawbarn & Ward, Limited, 7s. 6d. net.—This book, from the pens of Mr. H. Snowden Ward and Mrs. Catherine Weed Ward (editors of the *Photogram*) is of great value from many points of view, and is the result of great painstaking, study, and investigation, although the authors in their modest manner of summing up in the introduction say: "Our task has been a simple one—to write in plain words the tale of Shakespeare's life, to picture what remain to us of the scenes that Shakespeare saw . . . ." The information is gradually unfolded in nine chapters of most excellent reading, which are divided as follows:—Town and District—Historical Notes—Shakespeare's Ancestors—Childhood—Boyhood—Youth and Courtship—Seeking a Fortune—Manhood and Close of Life—His Memory. In addition to this, there is general information for visitors, map, copy of Shakespeare's will, etc. Nearly every page of this work (crown 4to) is illustrated with half-tone plates from photographs or photograms taken by Mrs. Ward, and are exquisitely fine.

PHOTOGRAPHY ANNUAL.—2s. 6d. London: Iliffe & Son, 3, St. Bride Street. Mr. Henry Sturmey, the editor of this Annual, has, as is his wont, again produced an excellent volume. Its contents are of a voluminous character and of great interest, and from cover to cover it measures a little over 1½ inches in thickness. It also contains some excellent diagrams and half-tone illustrations.

LANTERN SLIDES OF SHETLAND.—Mr. R. H. Ramsay of Lerwick, Shetland, has sent us some fine slides, of views and life in Shetland, being a portion of an interesting set which he has lately published. The slides are good both with respect to selection of subject and from a photographic point of view.

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Patent Intelligence.

The following list, relating to current Patent Applications, is compiled expressly for "The Optical Magic Lantern Journal" by a registered Patent Agent. For further information apply to The Patent Department, "Optical Magic Lantern Journal," 9, Carthusian Street, London, E.C.

No. RECENT PATENT APPLICATIONS.

12005. 2nd June, 1896. R. Ehrlich. Improvements in and relating to magic lanterns.

12128. 3rd June, 1896. T. Reich. Exhibiting goëtrope, and similar pictures.

12219. 4th June, 1896. P. Rudolph. Improvement in lenses.

13098. 13th June, 1896. Paul Gautier. Apparatus for producing photographic impressions in rapid succession, and for projecting same.

13380. 17th June, 1896. George Richards. Photographic apparatus for taking pictures on films, and projecting apparatus for projecting the pictures on a photographic screen.

13642. 20th June, 1896. A. F. Parmaland. Apparatus for use in receiving and projecting photographic images.

13674. 20th June, 1896. A. Wrench. Improvements connected with canvas and optical lanterns.

13865. 23rd June, 1896. W. F. Butcher & G. Harrop. Improvements in, and relating to condensing lenses.

14021. 24th June, 1896. C. C. Brodbeck. Apparatus for producing and reproducing photographic impressions of moving objects.

14038. 25th June, 1896. J. F. Parsons. Apparatus in use for taking photographs.

14305. 27th June, 1896. W. S. Simpson. Means and apparatus for photographing periodically.

14443. 30th June, 1896. E. S. Bruce. Apparatus for producing magic lantern pictures, space and in motion.

14560. 1st July, 1896. J. Airs. Sheath for holding plates; films or papers for photographic or other purposes.

14821. 4th July, 1896. J. Walsh. Optical lens for exhibition purposes.

14830. 4th July, 1896. J. S. George. Camera for taking instantaneous photographs in rapid succession, and for exhibiting same.

14858. 4th July, 1896. T. L. Dennet. Improvements in incandescent gas and oil burners.

14929. 6th July, 1896. A. H. J. Schulke. Apparatus for the production of acetylene gas for illuminating purposes.

14972. 7th July, 1896. M. Stephens. Camera, dark slide, and charging bag for photographic plates.

15122. 8th July, 1896. Haviland, Holloway, Collier & Murch. Apparatus for generating acetylene gas.

15343. 10th July, 1896. W. A. Tilden. Improvements in the manufacture of oxygen from the atmosphere.

15489. 13th June, 1896. Haviland and others. Apparatus and method for production of calcium carbide.

15603. 14th July, 1896. H. J. Heinze. Taking and reproducing animated pictures.

15654. 15th July, 1896. Whalley & Hacking. Acetylene gas store generators.

15847. 17th July, 1896. W. Brookes. Apparatus for developing photographic plates.

15929. 18th July, 1896. Thompson & Webb. Apparatus for developing photographic films in rolls.

15962. 18th July, 1896. Thorne & Hoddle. Apparatus for generating, storing and cooling acetylene gas.

RECENTLY-PRINTED SPECIFICATIONS.

Copies of the following specifications may be obtained by remitting 1/- for each specification to The Patent Department, "Optical Magic Lantern Journal," 9, Carthusian Street, London, E.C.

19541 of 1895.	Holst.	Photographic cameras.
12355 of 1895.	Thorp.	Gas producing lamps.
13076 of 1895.	Locke.	Oxy-hydrogen mixed gas jet.
7825 of 1896.	Clark.	Compressing air.
93 of 1896.	Joly.	Mounting and storing photographs.
3882 of 1896.	Lake.	Photographing machine.

Correspondence.

ACETYLENE GAS ILLUMINATION.

To the Editor.

SIR,—We see in your issue of the August Journal, you allude to Messrs. Thorn as being the first to apply acetylene to general lighting purposes. Allow us to say that such is not the case, as we lighted the Grand Ice Carnival held at Ashford on May the 21st, 22nd, 23rd, and 25th, and were complimented on the beauty and brilliancy of the light and the excellence of our generators. We have also fitted several shops with acetylene, one in this town, and we are at present fitting two more. There are several dwelling houses also about here lighted with acetylene by us. If you will insert this in your next issue we shall feel justified, as this is an honour that belongs to us, and not to the firm you mention.

Yours faithfully,
THE ACETYLENE GAS COMPANY.
Ashford.

SLIDES OF LIFE AND CHARACTER.

To the Editor.

SIR,—Not long ago I gave a public lecture on Rome, illustrated with limelight views, consisting of pictures of the usual sights of Rome. It was afterwards pointed out to me that there was a want of the "personal element" in the views, such as pictures of the soldiers, Swiss guard, natives, street sellers, etc I have since made enquiries in London, and find that such views are not to be had. There is no doubt, a series of say sixty pictures, all architectural, is rather too much of the one thing, and I therefore beg to suggest that the set now in use, should be improved by the introduction of views of the people, etc., of the different countries. As a matter of fact, when we travel abroad, we find quite as much interest in the natives as in their cities, considered architecturally, and in order to make the lantern entertainments more enjoyable and instructive, I think they should therefore be varied in the manner I have indicated. Trusting this list may bring about a better series of lantern sets.

I remain, yours truly,
W.L.

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Notes and Queries.

H. E.—We hardly understand your question, and are undecided as to whether you mean using acetylene with limelight, or using acetylene in a limelight lantern. We note you speak of a bi-unial. If you wish to use the acetylene light in a bi-unial lantern you can do so, but in turning the light down in the "off" lantern, you will have to be careful that you get it turned down below the smoking point, but one or two trials will demonstrate this.

L. Mathews.—We are sorry the short article came too late.

P. H. Grandin.—We note that you have at last managed to get your gas cylinders away from Jersey; the restrictions are certainly very ridiculous, but unfortunately they cannot be helped at present.

Photophil.—In all probability the arrangement was a shallow dish with a glass bottom placed on the upper condenser of what is termed a vertical attachment. Small cockroaches would be suitable to give the effect you mention, but as for the eel-like creatures we can form no idea. On the other hand it is possible that what you saw were forms used with a microscopical attachment for the lantern.

Major Godwin (India) writes:—(1) Does acetylene give as bright a light as oxycalcium. (I use spirits of wine and oxygen with hard lime). (2) If it does not, to what extent approximately is acetylene inferior? (3) Is there any objectionable smell from acetylene (*a*) when burning properly, (*b*) when escaping in small quantities accidentally. *Ans.* (1 and 2).—Assuming that the style of jet is the average one of its kind the light would be about the same. (3) When burning properly there is no objectionable smell, but remember that an ordinary gas burner as used for house gas is of no use, you must use one of the size 0000 or 00000, but you can then place one or two behind the other. If a small quantity escape accidentally it will at once make itself known to you as the smell is somewhat intense.

P. H. G.—In last journal an article *re* Tableau appeared. With the other lights down, you will get a more striking effect, but as you are to use all the light from the front it would give a softer effect were you to leave the side lights at stage on.

D. R. says:—He has a lens and a camera, and when closing the camera as much as possible, the picture on the ground glass is almost sharp, but not quite, and he asks what he can do to render the image sharp. He adds that on another camera the lens takes good pictures. Really the lens is too short in focus for the particular camera, which it is evident will not close up enough, so the next best thing is to set the lens a little way in the camera—fasten four strips of wood inside of the front, and on this secure a flat piece of wood with a hole in it to take the lens, it will be necessary to enlarge the hole in the present front so as to get the lens through.—If the difference is very slight, it may suffice to screw the flange on the inside of the front, you will thus gain the thickness of the wood.

Fred Johnson.—There is no patent on the folding tripod head, which we described and illustrated about a year ago. We lent it to Messrs. Newton & Co., of Fleet Street, and we understand that they have made several, perhaps you can obtain one from them.

X. Y. Z.—Number 3 is all right, but do not waste money on 1 or 2, as they are simply rubbish.

Film.—We have often experienced these troubles—Place the film on a plate of glass, and slip a rubber band over the two edges and put the lot in the developing tray, this will prevent it rolling up.

Engineer.—Good flour paste is the best for slide binders. Many of the ready gummed binders on the market cause the user to utter wicked words, as they will not stick on the glass properly.

Redbourne.—We have no knowledge of such apparatus being on the market.

J. P. Goldthorp.—The patent about which you enquire (14443) was applied for on June 30th, and is not yet published.

DEATH OF MR. J. H. STEWARD.—We regret to have to announce the death of Mr. J. H. Steward, the well-known optician of the Strand, which took place on Thursday, August 20th. Mr. Steward had for many months been ailing, and being unable to attend to business, these duties have for a long time past been in the hands of his sons.